



Product Description

Integrated with cutting edge digital signal processing, network control and dual channel Class D amplification, the VQNET MB is intended for use as a flown or ground stacked, high power low/mid frequency module used in conjunction with full range or mid/high systems in the VQ series.

Two (12") low frequency transducers, offer high power handling and low power compression for high continuous SPL capability. A newly designed LF loading design provides the highest possible sensitivity for low/mid frequency output.

The VQNET MB is principally intended for use with VQ systems to construct arrays with extended low frequency pattern control. By fixing a VQNET MB at the opposing end of a VQ full range loudspeaker we can effectively extend pattern control to below the cutoff point of the Mid/High PSW™ waveguide. By offsetting the devices using delay we can also steer the low frequency lobe. The VQNET MB can be used to extend the bandwidth of any VQ Mid/High product whether singly or as part of an array.

The modular approach of amplifiers, processing, monitoring and drivers designed into each loudspeaker enables acoustic optimization for the speaker to perform as a unified whole. The intuitive setup software, integrated processing, tuning control, performance diagnostics and protection produces an easy to install and exceptionally high performance networkable loudspeaker.

For outdoor applications, weather resistant enclosures which incorporate stainless steel hardware are available.

VNET™ Network

Each VQNET MB is fully VNET™ compliant. VNET™ supports free network topology so that the loudspeakers can be arranged in a daisy chain, linked in a star configuration or in any combination of both. Implementation of the network between nodes is via high quality rugged Neutrik Ethercon connectors, which are compatible with standard RJ45 plugs, and CAT5 cable. Each speaker has a unique address for auto-location on the network. System commissioning and ongoing network control, incorporating real time diagnostics of electronics and drive unit, are all managed by the exclusive VNET™ software package. Supplied with each unit, this intuitive Windows tool controls all critical install, commissioning and performance monitoring functions.

An RS485 interface is used for the serial data, with a twisted pair to send and receive information to a high number of nodes over very long distances. Operating a shared bus system, so that a single computer can control any node on that bus, also means that status information can be gathered from any of the devices. The RS-485 differential signal is very robust, while its noise immunity and long-distance capability ensure it is one of the most popular communications methods used in industry. Only data to control setup functions and ongoing system diagnostics is carried over the network.

Features

- Identical performance to low/mid section of VQ full range systems
- Modular design for a wide variety of applications
- Compact Dimensions
- Extremely high maximum SPL

Applications

- Stadiums & other Sports facilities
- Large Houses of Worship
- Large Corporate AV applications
- Dance Clubs
- Live sound – concert halls, theatres, open-air venues

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VQNET MB

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TECHNICAL SPECIFICATIONS

System	VQNET MB
System Type	Mid Bass - Vented
Frequency Response (-3dB) ⁽¹⁾	115Hz - 500Hz
Frequency Range (-10dB) ⁽¹⁾	90Hz - 600Hz
Rated Maximum SPL ⁽²⁾	135dB (average) 141dB (peak)
Driver Complement	2 x 300mm (12.00") Low Frequency Transducers, Semi Horn Loaded
Crossover (DSP Generated)	Variable Lowpass filter
Distortion	2nd Harmonic 3rd Harmonic
110dB SPL	
200Hz	0.152 0.065
400Hz	0.067 0.023
120dB SPL	
200Hz	0.446 0.175
400Hz	0.446 0.175
Construction	
Enclosure	18mm (0.71") birch plywood. Vented and internally braced.
Grill	Powder coated perforated steel. Stainless steel on weatherproof version.
Finish	Textured black or white paint (custom colours on request).
Connectors	1 x female XLR (input) 1 x male XLR (link) 1 x RJ45 (network in) 1 x RJ45 (network link) 1 x Neutrik NL4 (Amp ch2 Output) 1 x Neutrik Powercon (outlet)
Controls & Indicators	LED on front of cabinet behind grille. (wink indicator for locating & assigning) Power LED (blue) Signal LED (Green) Limit LED (Red) User DSP - defeat switch Power switch
Fittings	2 x Recessed carrying handles 12 x M10 flying inserts
Dimensions (HxWxD)	433mm x 694mm x 515mm (17.05" x 27.32" x 20.28")
NET Weight	41kg (90.2lbs)

Electronics

Efficiency	>85% typically
Damping Factor	120 ref 8 Ohms
Distortion	<0.05% @ 1kHz -3dB output 22kHz bandwidth)
Input Impedance	5.6kOhms unbalanced, 11.2kOhms balanced
Output Power (Programme)	2000W
Input Sensitivity	1.4V (+5.5dBu)
Input Sensitivity	Dual channel Class D

DSP System

Comms Facilities	Firmware updatable and selected parameters editable
Communications	Serial - RS485 Proprietary message format
Dynamic Range	112dB(A) typical
DSP	3rd generation SHARC
Sampling Frequency	96kHz 24 bit A/D-D/A word length
Format	1 IN - 2 OUT

PSU Specifications

PSU Specifications

Input Connector	Locking Neutrik Powercon
Voltage Selection	Automatic (115 / 230V, 45 - 65Hz)
Type	High current, high frequency switch mode
Efficiency	>90% typical
Input voltage	100v / 115v / 230v nominal +/-10%
Mains fuse	External
Fuse type	T10AT
Other features	Automatic soft start
Current Draw	115V 230V
Startup (inrush)	3.5A 1.9A
idle	1.0A 0.56A
Max	3.5A 1.7A

Notes:

(1) Average over stated bandwidth. Measured at 3 metres on axis, then referred to 1 metre

(2) Unweighted pink noise input, measured at 3 metres in an anechoic chamber, then referred to 1 metre

A full range of measurements, performance data, and Ease™ Data can be downloaded from www.tannoy.com

Tannoy operates a policy of continuous research and development. The introduction of new materials or manufacturing methods will always equal or exceed the published specifications, which Tannoy reserves the right to alter without prior notification

Ordering Information

PART NUMBER	MODEL NAME	COLOUR	PACKED QUANTITY
8001 5390	VQNET MB	BLACK	1
8001 5391	VQNET MB	WHITE	1

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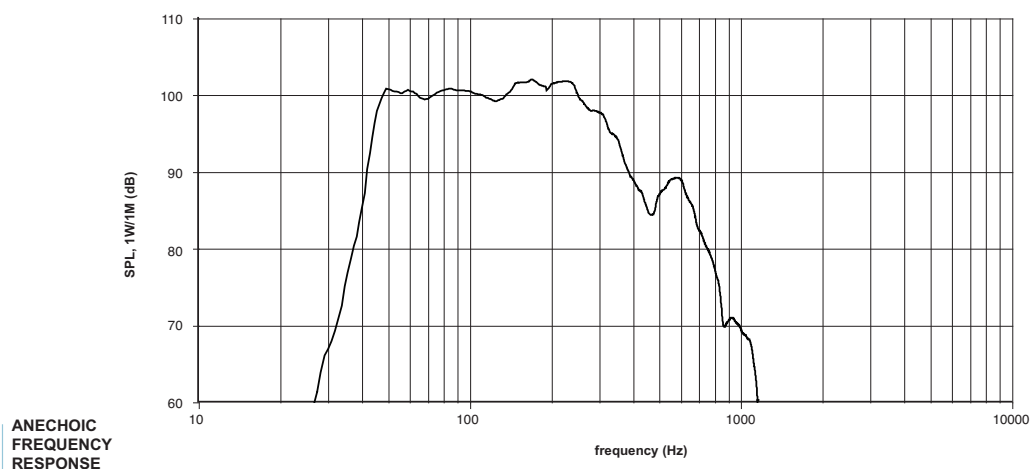
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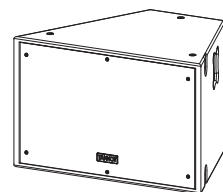
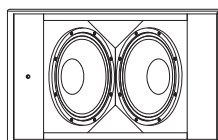
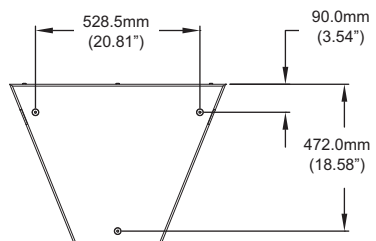
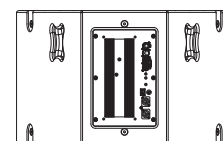
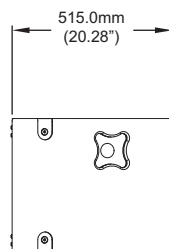
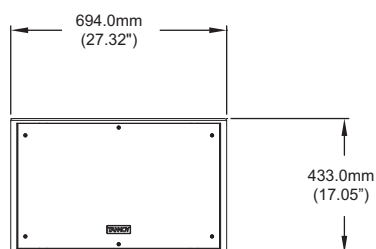
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PERFORMANCE MEASUREMENTS



DIMENSIONAL SKETCHES





VQNET MB

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VNET SOFTWARE

VNET™ SOFTWARE

The loudspeakers are fully calibrated at the factory, avoiding the need to input the correct speaker management settings or dynamics at the point of install. This frees the installer to concentrate instead on room measurement and system optimisation. System commissioning and ongoing venue network control, incorporating real time diagnostics of electronics and drive unit, are all managed by the exclusive VNET™ software package. Supplied with each unit, this intuitive Windows tool controls all of the critical install, commissioning and performance monitoring functions. A standard wireless LAN-to-serial bridge can be used to communicate with the network, allowing the commissioning engineer to sit in the auditorium communicating from a laptop on 802.11b

MONITORING & TELEMETRY FUNCTIONS

During normal operation the speakers on the network will appear as minimised panels in the form of a status monitor icon (Monicon) on the computer screen. These are laid out to reflect the physical layout of the speakers within the venue so that the user can monitor system status and component condition at a glance. The minimised panels can be expanded to reveal highly detailed information in real time:



- Input clip indicator
- Two output limiter bar graph meter
- Heat sink temperature bar graph meter
- Amplifier clip indicators (HF & LF on full range units)
- Transducer Failure Indicators (HF & LF on full range units)
- Amplifier protect status indicator

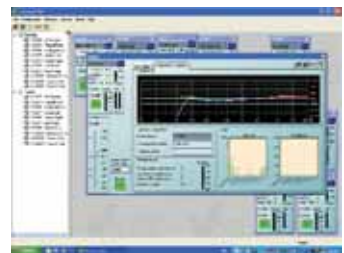
VNET™ Software Features

The on-screen control panel for each device in the network has a properties tab consisting of the following:

- Model Name is factory set with product model name
- Network Handle (read only) is a numerical value set at the time of manufacture to uniquely identify the device on the network
- Device Name is the specific user defined name, such as 'Stage.Left' or 'Delay 1'
- Firmware Version (read only) is a numerical value of firmware version running in the device
- Configuration Name is the 12 character name the user can define to describe the current settings (such as 'Live Mode')
- Current 'Voice' profile indication (read only) is a numerical value indicating the current speaker 'voicing' profile (the factory set equalization, crossover, & dynamics functions)
- Software file loader in VNET™ allows a future modification to the software to be uploaded, such as a 'voicing' change or revised control software with new features
- Record of any temperature or current shutdowns
- Record of the number of power cycles
- Rolling four day bar graphs recording amplifier temperature and any dynamics applied

Signal Processing

- Gain Section: input gain fader with edit box (-30 to +15dB in 0.2dB steps)
- Input Mute: On, Off
- High-Pass Filter section: frequency spin / edit box and shape drop-down box
- Low-Pass Filter Section: frequency spin / edit box and shape drop-down box
- Equaliser Section: high resolution input EQ curve display
- Low Shelf Band: frequency spin / edit box, slope spin / edit box and boost-cut / edit box
- High Shelf Band: frequency spin / edit box, slope spin / edit box and boost-cut / edit box
- Parametric EQ Bands (x 8): frequency spin / edit box, slope spin / edit box and boost-cut / edit box
- Delay Section: delay spin / edit box (up to 180ms)



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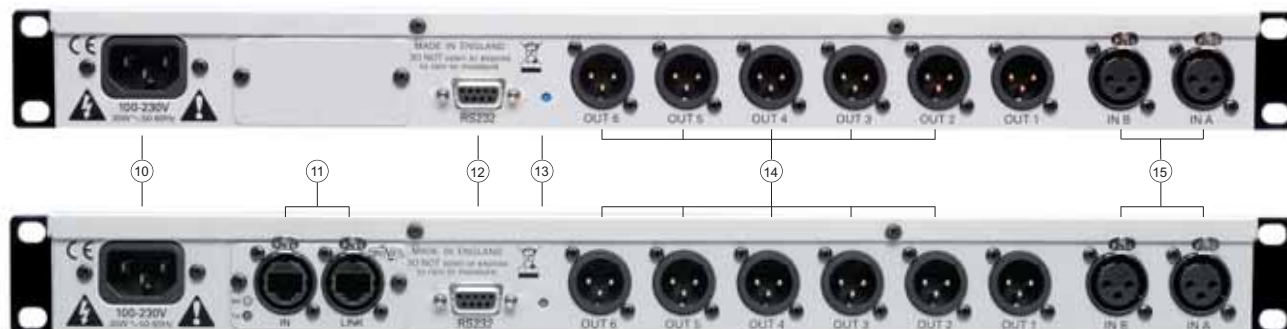
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VNET SC1 CONTROLLER



VNET SC1 Controller



VNET SC1 Controller (network enabled)

Front Panel

- ① **INPUT SIGNAL INDICATORS**
A set of three pairs of LEDs indicate signal present, +4dBu and input clip for each channel.
- ② **STORE BUTTON**
The unit has 45 preset locations.
- ③ **RECALL BUTTON**
To recall a preset, press the recall button and use parameter knob A to select the required preset.
- ④ **CHANNEL SELECT BUTTONS**
The currently selected input or output channel is shown in the top left corner of the display. Pressing the channel select buttons scrolls through the available inputs and outputs.
- ⑤ **EDIT PARAMETER SELECT BUTTON**
The name of the edit parameter page is displayed in the bottom left portion of the LCD.
- ⑥ **DISPLAY SCREEN**
Preset, channel, parameter and status information is shown on the 2x 24-character text display. In most screens the currently selected channel is displayed being the upper line and the edit parameter on the lower line.
- ⑦ **PARAMETER EDIT ENCODERS**
Three velocity sensitive parameter knobs are used to adjust parameters shown on the display. Up to three parameters at a time are displayed on the screen.
- ⑧ **LIMITER INDICATOR**
Two LEDs are provided for each output channel.
- ⑨ **MUTE BUTTONS**
Each output has a mute button and associated mute status LED.

Rear Panel

- ⑩ **POWER INLET**
The processor has a switch mode power supply that is capable of operating with a nominal mains voltage of 85V to 240V, 50/60Hz without re-configuration.
- ⑪ **VNET™ NETWORK PORTS**
The network enabled VNET SC1 controller features two network ports for connection to any VNET™ system.
- ⑫ **COMMUNICATIONS PORT CONNECTOR**
Tannoy VNET SC1 processors may be controlled entirely from a PC running VNET™ software using this RS232 serial port connector. This port is also used for updating the firmware in the unit.
- ⑬ **SECURE MODE SWITCH**
A momentary button is fitted behind the rear panel, between the output XLRs and the RS232 port. When activated, this will disable all the front panel controls so they cannot affect the signal path, making the unit secure against tampering.
- ⑭ **AUDIO OUTPUT CONNECTORS**
The processed outputs are impedance balanced.
- ⑮ **AUDIO INPUT CONNECTORS**
All audio connections are fully balanced.

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OPTIONAL VNET™ USB AND RS232 INTERFACE

The rack-mountable VNET™ interface allows for communication between a VNET™ network and computer.

If communicating with a non-networked SC1 direct communication via the PC & SC1 can be made with a standard serial lead, or USB-RS232 cable.



OPTIONAL VNET™ ACCESSORY POWER SUPPLY

The PSU is only required when communication with a VNET™ network is by RS232.



OPTIONAL RACK MOUNT KIT

This 1U bracket allows you to rack mount up to three VNET™ interface accessories in a standard 19" equipment rack.



Ordering Information

PART NUMBER	MODEL NAME	BAFFLE / GRILLE COLOUR	PACKED QUANTITY	PACKED WEIGHT
8001 4450	VNET™ USB / RS 232 Interface	Black	1	0.75 (1.65lb)
8001 4460	VNET™ Power Supply Interface	Black	1	0.75 (1.65lb)
8001 4470	VNET™ Interface 1U rack mount kit	Black	1	0.75 (1.65lb)

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